What is claimed is:

1. A method for interpolating an image between a first and a second image, the method comprises the steps of:

   a) forming a vector field composed of a number of motion vectors between the first and second image, each motion vector associated to motion vector specific parameters;

   b) forming an intermediate image by using the vector field to interpolate values of the associated parameters of the motion vectors in a level of the intermediate image;

   c) calculating a distortion between the formed intermediate image and the target image,

   d) if the distortion is not acceptable, calculating new parameter values, reforming the intermediate image, and repeating step c), and

   e) if the distortion is acceptable, accepting the formed intermediate image to be the desired image.

2. A method according to claim 1, wherein the associated parameters of the motion vectors represent color and motion information.

3. A method according to claim 1, wherein the interpolation is made for at least one part of the image.

4. A method according to claim 2, wherein the interpolation is made for at least one part of the image.

5. A method according to claim 2, wherein when forming the intermediate image, values of adjusting parameters are taken into account.

6. A method according to claim 3, wherein when forming the intermediate image, values of adjusting parameters are taken into account.

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7. A method according to claim 4, wherein when forming the intermediate image, values of adjusting parameters are taken into account.

8. A method according to claim 1, wherein the distortion is a sum of errors between the formed intermediate image and the image which is desired to be formed.

9. A method according to claim 1, wherein the distortion is a sum of square errors between the formed intermediate image and the image, which is desired to be formed.

10. A method according to claim 1, wherein after step c) the latest distortion is compared to the previous distortion, and the associated parameter values of the motion vectors are selected to be initial values for the next calculation of new associated parameter values so that

the latest associated parameter values are selected if the latest distortion is smaller than the previous distortion and

the previous associated parameter values are selected if the previous distortion is smaller than the latest distortion.

11. A method according to claim 5, wherein the distortion is a sum of errors between the formed intermediate image and the target image.

12. A method according to claim 6, wherein the distortion is a sum of errors between the formed intermediate image and the target image.

13. A method according to claim 7, wherein the distortion is a sum of errors between the formed intermediate image and the target image.

14. A method according to claim 5, wherein the distortion is a sum of square errors between the formed intermediate image and the target image.

15. A method according to claim 6, wherein the distortion is a sum of square errors between the formed intermediate image and the target image.

16. A method according to claim 7, wherein the distortion is a sum of square errors between the formed intermediate image and the target image.

17. A method according to claim 5, wherein after step c) the distortion is compared to a distortion calculated previously, and the associated parameter values of the motion vectors are selected to be initial values for a subsequent calculation of new associated parameter values so that

the latest associated parameter values are selected if the latest distortion is smaller than the previous distortion and

the previous associated parameter values are selected if the previous distortion is smaller than the latest distortion.

18. A method according to claim 6, wherein after step c) the latest distortion is compared to the previous distortion, and the associated parameter values of the motion vectors are selected to be initial values for the next calculation of new associated parameter values in a way that

the latest associated parameter values are selected if the latest distortion is smaller than the previous distortion and

the previous associated parameter values are selected if the previous distortion is smaller than the latest distortion.

19. A method according to claim 7, wherein after step c) the latest distortion is compared to the previous distortion, and the associated parameter val-

ues of the motion vectors are selected to be initial values for the next calculation of new associated parameter values in a way that

the latest associated parameter values are selected if the latest distortion is smaller than the previous distortion and

the previous associated parameter values are selected if the previous distortion is smaller than the latest distortion.

20. A method according to claim 10, wherein subsequent calculation of new associated parameter values a range around the initial values, where the new parameter values are successively smaller.

21. A method according to claim 17, wherein the next calculation of the new associated parameter values a range around the initial values, where the new parameter values are successively smaller.

22. A method according to claim 18, wherein the next calculation of the new associated parameter values a range around the initial values, where the new parameter values are successively smaller.

23. A method according to claim 19, wherein the next calculation of the new associated parameter values a range around the initial values, where the new parameter values are successively smaller.

24. A method according to claim 1, wherein more than one intermediate image is interpolated using the same vector field.

25. A method according to claim 21, wherein more than one intermediate image is interpolated using the same vector field.

26. A method according to claim 22, wherein more than one intermediate image is interpolated using the same vector field.

27. A method according to claim 23, wherein more than one intermediate image is interpolated using the same vector field.

28. A method according to claim 1, wherein an image to be encoded is encoded using the associated parameter values.

29. A method according to claim 21, wherein an image to be encoded is encoded using the associated parameter values.

30. A method according to claim 22, wherein an image to be encoded is encoded using the associated parameter values.

31. A method according to claim 23, wherein an image to be encoded is encoded using the associated parameter values.

32. A method according to claim 28, wherein the encoded image to be decoded is decoded using the associated parameter values.

33. A method according to claim 29, wherein the encoded image to be decoded is decoded using the associated parameter values.

34. A method according to claim 30, wherein the encoded image to be decoded is decoded using the associated parameter values.

35. A method according to claim 31, wherein the encoded image to be decoded is decoded using the associated parameter values.

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36. A method according to claim 1, wherein the vector field is a singular vector field.

37. A method according to claim 2, wherein the vector field is a singular vector field.

38. A method according to claim 10, wherein the vector field is a singular vector field.

39. A method according to claim 20, wherein the vector field is a singular vector field.

40. An encoder for encoding images, comprising:

a) a vector module adapted to produce a plurality of motion vectors between a first and a second image, each motion vector associated with motion vector specific parameters,

b) an image forming module, adapted to form an intermediate image by using said plurality of motion vectors to derive by interpolation values of the associated parameters of the motion vectors at the intermediate image level,

c) a distortion calculator module, adapted to calculate a distortion between the formed intermediate image and the target image.

d) an evaluator module adapted to accept the formed intermediate image to be the target image if the distortion is acceptable, which is also the encoded image in the form of the motion vectors and the associated parameter values,

e) a calculator module adapted to calculate new associated parameters of the motion vectors, if the distortion was not acceptable, and a reforming module adapted to reform the intermediate image by using the new associated parameters and to repeat the actions of

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module c) by transporting the reformed intermediate image to module c), if the distortion was not acceptable.

41. An encoder according to claim 40, wherein the evaluator module comprises:

f) a comparison module adapted to compare the latest distortion and the previous distortion,

g) a selection module adapted to select associated parameter values of the motion vectors to be initial values for module e) in a way that the latest associated parameter values are selected if the latest distortion is smaller than the previous distortion and the previous associated parameter values are selected if the previous distortion is smaller than the latest distortion.

42. An encoder according to claim 41, wherein the module f) comprises a change module adapted to change a range around the initial values, wherein the new parameter values are, smaller than in the previous calculation.

43. A decoder for decoding images, the decoder comprising:

a) a first construction module adapted to form a vector field that is composed of a number of motion vectors between a first and a second image, using predetermined information of the motion vectors and associated parameter values,

b) a second construction module adapted to form an image using the vector field and the associated parameter values, the formed image being the decoded image.

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